It never ends: economic continuities across the life-course

Martin Knapp
Personal Social Services Research Unit
London School of Economics & Political Science & NIHR School for Social Care Research
It never ends: structure

A. Mental health - quick intro
B. Risk & protective factors
C. Genes & early life environment
D. Bullying
E. Childhood mental illness
F. Dementia risks
G. Responses to life-course continuities
Mental health - quick intro
Disability: years lived with disability by cause and age, UK in 2010

Mental & behavioural disorders

Neurological disorders

Murray et al., *Lancet* 2013
DALYs for each mental and substance use disorder, global, 2010, by age

Whiteford et al, Lancet 2013
Age of onset for lifetime mental disorder

At Age 14

50% OF LIFETIME MENTAL ILLNESS (EXCLUDING DEMENTIA) STARTS BY AGE 14

By Mid Twenties

75% OF LIFETIME MENTAL ILLNESS (EXCLUDING DEMENTIA) STARTS BY MID TWENTIES

Poor social/emotional adjustment at 7, 11, 16 - more common in lower social classes

*Continuities of disadvantage* - Adjustment does not improve over time for children from lower social classes, but does improve for higher social classes

Source: 1958 National Child Development Study

Marmot Review 2010
Risk & protective factors
Life-course overview: risk & protective factors

**RISK FACTORS**
- Genetic risk
- Childhood emotional problems
  - Stressful life events, abuse, bullying
- Anxiety, cardiovascular disease, insomnia. Lifestyle choices
- Limitations in daily living. Cognitive imp’t & neuropathology

**PROTECTIVE FACTORS**
- Socioeconomic advantage; breastfed
- High educational level, occupational position & income
- Close social network
- Social engagement; sense of mastery
- Meaning in life
Genes & early life environment
The gene effect is perhaps bigger than previously thought ... but still modest

Heritabilities
Common inherited genetic variation accounts for up to 28% of the risk (in darker green)

Cost of gene-profiling has plummeted ...
... opening the way for precision medicine?
Maternal mental health

- Studied a cohort of women & children: Effects of perinatal depression on child development outcomes at ages 11 and 16; and their costs.

- Calculated national costs of maternal mental health problems in perinatal period. Modelling of additional risks of adverse outcomes & cost consequences into adulthood.
Transmission: child development problems resulting from maternal perinatal depression

Adjusted for child gender, mother’s age, previous depression, relationship changes (none significant).
... with cost implications: Cost per child exposed to perinatal depression

Continuities of disadvantage
- PND is more common among mothers in lower socioeconomic groups

Costs in £ (GBP), 2010/11 prices, discounted to birth

Bauer et al *Psych Medicine* 2014; Bauer et al *J Affective Disorders* 2016
Continuities of disadvantage - Children with low cognitive score at age 2 in high socioeconomic group overtake children with high cognitive score in low socioeconomic group before age 10.
Bullying
Bullying in childhood & adolescence

- **Aggressive behaviour**: *direct* (physical intimidation, verbal threats) or *indirect* (exclusion, rejection)
- **Very common**: 54% of people aged 12-20 experienced some form of bullying in the previous year (*Ditch the Label* survey, UK, 2017); 17% experienced cyberbullying
- High correlation between various forms of bullying: those who are bullied are often victimised both in person and online. But risk of *cyberbullying* may increases with age (unlike ‘traditional’ bullying)
- Also stalking, trolling, grooming, revenge porn, hacking
- **Consequences**: school absenteeism, emotional distress, self-harm, suicide attempts ... + adulthood impacts ...
Parental interviews when participants aged 7 & 11 years. Was their child bullied by other children? Combined responses from both ages (n = 11,872) to create indicator of exposure to childhood bullying:
0 = never (‘never’ at both 7 & 11 yrs)
1 = occasionally (‘sometimes’ at either 7 or 11)
2 = frequently (‘frequently’ at either 7 or 11, or ‘sometimes’ at both ages).
Being bullied in childhood leads to psychological distress in adulthood

Takizawa et al Am J Psychiatry 2014

Age 23

Mean score

Never bullied  Sometimes bullied  Frequently bullied

Age 50

Mean score

Total sample  Males  Females  Total sample  Males  Females

Being bullied in childhood leads to psychological distress in adulthood.
Specialist mental health service use to age 50 - by frequency of bullying at ages 7 & 11

**Continuities of disadvantage** - children from lower socioeconomic groups more likely to be bullied (Arseneault *JCPP* 2017)

**Economic effects**
- service use costs
- productivity losses
- employment status
- earnings from employment
- home ownership

Evans-Lacko et al *Psych Medicine* 2016; Brimblecombe et al *submitted*
Childhood mental illness
Evidence from the 1970 British Birth Cohort Study

- 17,198 children born in UK in 1 week, April 1970
- Data collections at ages 5, 10, 16, 26, 30 ... ...
- 11,261 people followed up at age 30

Initial work concentrated on anxiety, attention deficit, ADHD (dimensions generated by the data).

Research question ➔ What is connection between mental health problems at age 10 and employment, earnings and income at age 30?

We adjusted for all other relevant child, family and other factors in the dataset

Knapp et al Jnl Mental Health Policy & Economics, 2011
### Summary of main findings

<table>
<thead>
<tr>
<th>Metric</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Antisocial conduct</td>
<td>Attention deficit</td>
</tr>
<tr>
<td>Economically active</td>
<td>Worse</td>
<td>Worse</td>
</tr>
<tr>
<td>Occupational status</td>
<td>Worse</td>
<td>Worse</td>
</tr>
<tr>
<td>Earnings if in employment</td>
<td>Worse</td>
<td>Worse</td>
</tr>
<tr>
<td>Expected earnings</td>
<td>Worse</td>
<td>Worse</td>
</tr>
</tbody>
</table>

**Economically active**: Males and females both show worse outcomes in terms of economic status compared to their respective occupational status. Males show worse outcomes in expected earnings, while females show worse outcomes in expected and actual earnings.
# Summary of main findings

<table>
<thead>
<tr>
<th></th>
<th>Antisocial conduct</th>
<th>Attention deficit</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Males</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economically active</td>
<td><strong>Worse</strong></td>
<td><strong>Worse</strong></td>
<td>-</td>
</tr>
<tr>
<td>Occupational status</td>
<td>-</td>
<td><strong>Worse</strong></td>
<td>-</td>
</tr>
<tr>
<td>Earnings if in employment</td>
<td><strong>Better</strong></td>
<td><strong>Worse</strong></td>
<td>-</td>
</tr>
<tr>
<td>Expected earnings</td>
<td><strong>Better</strong></td>
<td><strong>Worse</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economically active</td>
<td><strong>Worse</strong></td>
<td><strong>Worse</strong></td>
<td><strong>Worse</strong></td>
</tr>
<tr>
<td>Occupational status</td>
<td><strong>Worse</strong></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Earnings if in employment</td>
<td><strong>Worse</strong></td>
<td><strong>Worse</strong></td>
<td><strong>Worse</strong></td>
</tr>
<tr>
<td>Expected earnings</td>
<td>-</td>
<td><strong>Worse</strong></td>
<td><strong>Worse</strong></td>
</tr>
</tbody>
</table>

*But* these apparent advantages disappear by mid-adulthood.
Dementia risks
Dementia risks

Dementia prevalence: 850,000 in 2015 (UK); >2,000,000 by 2051. No currently known cure.

Risk factors for dementia:
- Genes (at birth)
- Education (early life +)
- Hearing loss, hypertension, obesity (mid-life)
- Smoking, depression, physical inactivity, social isolation, diabetes (late-life)

Population-attributable risk = 35%

Livingston et al Lancet 2017

Continuities of disadvantage - Risk factors are inequitably distributed across the population - in fact, inequalities widen over the life-course
Responses to life-course continuities?
Responses & challenges

1. Evidence
2. Timing - preferences & ‘diagonal’ issues
3. Efficiency vs equity
4. Targeting
5. Personal freedom
6. Politics & vested interests
1. Evidence

- Evidence is needed on interventions in a range of different sectors - schools, workplaces, communities, transport - as well as on healthcare.
- There is evidence - loads of it ...
- ... though it may say much about targeting ...
- ... and the full impacts may take many years to be seen - e.g. whether a prevention programme really works.
- Overtaken by other priorities or circumstances?
2. Timing - preferences & ‘diagonal’ issues

- Prevention: we incur costs, risks and inconveniences now ...
- ... but the benefits (if any) occur later.
- Most people prefer to postpone costs and to bring forward benefits ... and any cost-effectiveness gains may be many years away
- Complicatedly ... the (distant) benefits might also accrue to a different budget / sector
3. Efficiency vs equity

- Is it more efficient to spend scarce resources on treatment or prevention?
- A prevention programme may be cost-effective but *not cost-saving* - decision-makers must weigh up not only whether outcomes justify the costs, but also affordability.
- But wide inequalities in (e.g.) genetic risks, early-life experiences, health literacy, access to health-promoting resources / opportunities (etc.) ...
- ... So how much efficiency are we prepared to sacrifice to tackle inequities?
4. Targeting

- Universal prevention programmes might look sensible, but could be expensive.
- And the ‘elbows of the middle classes’ are very ‘sharp’.
- Should policy target efforts/resources on high-risk groups (despite the ‘prevention paradox’) and/or on lower-income groups?

But targeting can be problematic:

- Hard to predict risks?
- Expensive to detect high-risk groups?
- Stigma of being targeted?
5. Personal freedom

• Should individuals be free to choose their own lifestyle or does society have a political mandate or moral duty to intervene with compulsory action (‘Nanny State’)?

• Protecting individual autonomy makes prevention a harder policy call.

• Are behavioural approaches (‘nudges’) - libertarian paternalism - more acceptable?
6. Politics

- Strong evidence that market-based interventions work well in some areas (e.g. tobacco, alcohol), so *price rises (taxes)* would be a good strategy ....
- ... But governments are usually reluctant to increase taxes - it *loses votes*
- Anyway, indirect taxes can be *regressive* - hurt lower-income groups disproportionately
- Politically easy to cut spend on prevention when public finances are under pressure
- Strong *vested interests of industry*
- ... good at lobbying.
Some of the work presented here was supported from:

- Department of Health & Social Care (DHSC) for England
- National Institute for Health Research (NIHR)
- NIHR School for Social Care Research
- Economic and Social Research Council (ESRC)
- Comic Relief

All views expressed in this presentation are those of the presenter, and are not necessarily those of the DH, NIHR, ESRC or Alzheimer’s Society.

I have no conflicts of interest to report that are relevant to this presentation.

Thank you

m.knapp@lse.ac.uk